

WHAT IS CLAIMED IS:

1. A method of allocating an initial maintenance region for an upstream channel in a communications system, wherein the communications system comprises a headend and at least one remote device associated with the channel, said method comprising the steps of:

a. determining a propagation delay T_2 from a remote device experiencing the greatest delay of all remote devices associated with the channel, to a demodulator that demodulates upstream transmissions;

b. determining a propagation delay T_1 from a remote device experiencing the least delay of all remote devices associated with the channel, to the demodulator;

c. defining the size of the initial maintenance region to be less than T_2 , and at least as great as the difference between the propagation delays, $T_2 - T_1$.

2. The method of claim 1, further comprising the step of:

d. creating a MAP that expresses the starting point of the initial maintenance region.

3. The method of claim 1, further comprising the step of:

d. sending a MAP to the at least one remote device wherein the MAP expresses the starting point of the initial maintenance region.

4. The method of claim 1, wherein step c comprises the steps of :

i) adding, to a clock output associated with the channel, a programmable offset that is less than or equal to T_1 , to form an offset clock output;

ii) translating the offset clock output to a corresponding offset minislot count; and

iii) defining the starting point of the initial maintenance region according to the offset minislots count.

5. The method of step 4, wherein the programmable offset is defined in terms of periods of a 10.24 MHz signal.

6. The method of claim 1, wherein the remote devices are cable modems.

7. The method of claim 1, wherein the headend is a cable modem termination system.

8. The method of claim 1, wherein the demodulator is incorporated in the headend.

9. The method of claim 1, wherein the demodulator is incorporated in an intermediate node.

10. A communications system in which an initial maintenance region is allocated in a communications channel for purposes of allowing synchronization between communicating entities, the system comprising:

a headend for delivery and receipt of information;

at least one remote device that is associated with said headend and that transmits information to said headend via an upstream channel;

clock circuitry in said headend for generating a clock output that marks regular intervals in said upstream channel;

an adder in said headend for adding an offset to the clock output, to offset a starting point of the initial maintenance region.

11. The system of claim 10, wherein said adder is programmable.

12. The system of claim 10, wherein said offset represents a time interval less than or equal to a propagation delay between a remote device having the shortest propagation delay of all remote devices associated with the upstream channel and said demodulator.

13. The system of claim 12, wherein said headend comprises said demodulator.

14. The system of claim 12, further comprising an intermediate node between said headend and said at least one remote device, wherein said intermediate node comprises said demodulator.

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